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ICF Consulting / Laboratory Data Consultants
Environmental Services Assistance Team, Region 9
1337 South 46th Street, Building 201, Richmond, CA 94804-4698
Phone: (510) 412-2300 Fax: (510) 412-2304

MEMORANDUM

TO: Matt Mitguard, Site Assessment Manager
Tribes and Site Assessment Section, SFD-9-1

THROUGH: Rose Fong, ESAT Project Officer RF
Quality Assurance (QA) Office, PMD-3

FROM: Doug Lindelof, Data Review and QA Document Review Task Manager
Environmental Services Assistance Team (ESAT)

ESAT Contract No.: 68-W-01-028
Task Order: B01
Technical Direction No.: B0105187 Amendment 1

DATE: May 19, 2003

SUBJECT: Review of Analytical Data, Tier 3

Attached are comments resulting from ESAT Region 9 review of the following analytical data:

SITE:	~~Jaik Pac~~ Continental Heat Treating
SITE ACCOUNT NO.:	09 ZZ LA00
CERCLIS ID NO.:	CAD095631719
CASE NO.:	31519
SDG NO.:	Y0SJ2
LABORATORY:	A4 Scientific, Inc. (A4)
ANALYSIS:	Volatiles
SAMPLES:	4 Water Samples
COLLECTION DATE:	March 19, 2003
REVIEWER:	Kendra DeSantolo, ESAT/Laboratory Data Consultants (LDC)

The comments and qualifications presented in this report have been reviewed by the EPA Task Order Project Officer (TOPO) for the ESAT Contract, whose signature appears above.

If there are any questions, please contact Rose Fong (QA Program/EPA) at (415) 972-3812.

Attachment

cc: Ray Flores, CLP PO USEPA Region 6
Steve Remaley, CLP PO USEPA Region 9
ESAT File

CLP PO: [ ] FYI [X] Attention [ ] Action

SAMPLING ISSUES: [X] Yes [ ] No

Data Validation Report

Case No.: 31519 SDG No.: Y0SJ2
Site: Continental Heat Treating
Laboratory: A4 Scientific, Inc. (A4)
Reviewer: Kendra DeSantolo, ESAT/LDC
Date: May 19, 2003

I. Case Summary

SAMPLE INFORMATION:

Samples:	Y0SJ2, Y0SJ3, Y0SJ4, and Y0SJ5
Concentration and Matrix:	Low Concentration Water
Analysis:	Volatiles
SOW:	OLC03.2
Collection Date:	March 19, 2003
Sample Receipt Date:	March 20, 2003
Extraction Date:	Not Applicable
Analysis Date:	March 27 and 28, 2003

FIELD QC:

Trip Blanks (TB):	Not Provided
Field Blanks (FB):	Not Provided
Equipment Blanks (EB):	Y0SJ5
Background Samples (BG):	Not provided
Field Duplicates (D1):	Y0SJ2 and Y0SJ3
Field Duplicates (D2):	Not Provided

METHOD BLANKS AND ASSOCIATED SAMPLES:

VBLK4N:	Y0SJ2DL, Y0SJ3DL, Y0SJ4DL, and Y0SJ5
VBLK4P:	Y0SJ2, Y0SJ3, and Y0SJ4
VBLK4U:	VHBLK01

TABLES:

1A:	Analytical Results with Qualifications
1B:	Data Qualifier Definitions for Organic Data Review
2:	Calibration Summary

CLP PO ACTION:

None.

CLP PO ATTENTION:

1) Detected results for several analytes are qualified as nondetected and estimated (U,J) due to method blank, storage blank and equipment blank contamination.

2) Detected results and quantitation limits for several analytes are qualified as estimated (J) due to calibration problems.

3) Detected results and quantitation limits for several analytes are qualified as estimated (J) due to deuterated monitoring compound (DMC) problems.

SAMPLING ISSUES:

1) Detected results for acetone and toluene in sample Y0SJ4 are qualified as nondetected and estimated (U,J) due to contamination in equipment blank Y0SJ5.

2) Sample Y0SJ2 was designated as the matrix spike/matrix spike duplicate (MS/MSD) sample on the Traffic Report and Chain of Custody Record. However, no MS/MSD was performed or required for Region 9 volatile OLC03.2 analysis.

ADDITIONAL COMMENTS:

Other than laboratory artifact (retention time = 7.8 minutes), tentatively identified compounds (TICs) were detected in samples Y0SJ2, Y0SJ3, and Y0SJ4 (see attached Form 1LCFs and SDG Narrative).

Manual integrations were performed on xylenes (total) in samples Y0SJ2, Y0SJ3, and Y0SJ4 because the software failed to integrate the entire peak. The manual integrations were reviewed and found to be satisfactory and in compliance with proper integration techniques.

This report was prepared in accordance with the following documents:

- ESAT Region 9 Standard Operating Procedure 901, *Guidelines for Data Review of Contract Laboratory Program Analytical Services (CLPAS) Volatile and Semivolatile Data Packages*;
- *USEPA Contract Laboratory Program (CLP) Statement of Work for Organics Analysis,* OLC03.2, December 2000; and
- *USEPA Contract Laboratory Program National Functional Guidelines for Low Concentration Organic Data Review*, June 2001.

II. Validation Summary

	Acceptable/Comment	
HOLDING TIMES	YES	
GC/MS TUNE/GC PERFORMANCE	YES	
INITIAL CALIBRATIONS	NO	C, D
CONTINUING CALIBRATIONS	NO	C, E
LABORATORY BLANKS	NO	B
FIELD BLANKS	NO	B
DEUTERATED MONITORING COMPOUNDS	NO	F
MATRIX SPIKE/DUPLICATES	N/A	
LABORATORY CONTROL SAMPLE/DUPLICATES	N/A	
INTERNAL STANDARDS	YES	
COMPOUND IDENTIFICATION	YES	
COMPOUND QUANTITATION	YES	A, H
SYSTEM PERFORMANCE	YES	
FIELD DUPLICATE SAMPLE ANALYSIS	NO	G

N/A = Not Applicable

III. Validity and Comments

A. The following results, denoted with an "L" qualifier, are estimated and flagged "J" in Table 1A.

- All results below the contract required quantitation limits

Results below the contract required quantitation limits (CRQLs) are considered to be qualitatively acceptable, but quantitatively unreliable, due to the uncertainty in analytical precision near the limit of detection.

B. The following results are qualified as nondetected and estimated due to method blank, storage blank, and equipment blank contaminations, and are flagged "J" in Table 1A.

- Acetone and toluene in sample Y0SJ4
- Chloroform and bromoform in samples Y0SJ2 and Y0SJ5
- Methylene chloride in storage blank VHBLK01
- Chloromethane in samples Y0SJ2, Y0SJ3, and Y0SJ4

Methylene chloride was found in method blank VBLK4U at a concentration of 0.2 μg/L. Chloroform was found in method blanks VBLK4N and VBLK4P at concentrations of 0.4 μg/L and 0.3 μg/L, respectively. Bromoform was found in method blanks VBLK4N and VBLK4P at concentrations of 0.4 μg/L and 0.3 μg/L, respectively. Chloromethane was found in storage blank VHBLK01 at a concentration of 0.2 μg/L. Acetone and toluene were found in equipment blank Y0SJ5 at concentrations of 2 μg/L and 0.2 μg/L, respectively. Results for the samples listed above are considered nondetected and estimated (U,J) and the quantitation limits have been increased according to the blank qualification rules presented below.

No positive results are reported unless the concentration of the compound in the sample exceeds 10 times the amount in any associated blank for the common laboratory contaminants or 5 times the amount for other compounds. If the sample result is greater than the CRQL, the quantitation limit is raised to the sample result. If the sample result is less than the CRQL, the result is reported as nondetected at the CRQL.

Acetone results for samples Y0SJ2 (33 μg/L) and Y0SJ3 (27 μg/L) are not qualified since their concentrations exceed 10 times the amount detected in the associated equipment blank. Toluene results for samples Y0SJ2 (1.1 μg/L) and Y0SJ3 (1.7 μg/L) are not qualified since their concentrations exceed 5 times the amount detected in the associated equipment blank.

Although methylene chloride, 1,2,4-trichlorobenzene, and 1,2,3-trichlorobenzene were found in method blanks VBLK4N and VBLK4P (see Table 2 for concentrations), no data are qualified because these analytes were not detected in the associated samples.

A laboratory method blank is laboratory reagent water analyzed with all reagents, deuterated monitoring compounds, and internal standards and carried through the sample preparation and analytical procedures as the field samples. The laboratory method blank is used to determine the level of contamination introduced by the laboratory during analysis.

A storage blank is laboratory reagent water stored in a vial in the same area as the field samples. The storage blank is used to determine the level of contamination introduced by the laboratory during sample storage prior to analysis.

An equipment blank is clean water that has been collected as a sample using decontaminated sampling equipment. The intent of an equipment blank is to monitor for contamination introduced by the sampling activity, although any laboratory introduced contamination will also be present.

C. Detected results and quantitation limits for the following analytes are qualified as estimated due to low relative response factors (RRFs) in the initial and continuing calibrations, and are flagged "J" in Table 1A.

- Acetone and 2-butanone in all samples, all method blanks and storage blank VHBLK01

Average RRFs below the 0.05 validation criterion were observed for acetone and 2-butanone in the initial calibration performed on March 26, 2003 (see Table 2). RRFs below the 0.05 validation criterion were observed for acetone and 2-butanone in the continuing calibrations performed on March 27, March 28 and April 2, 2003 (see Table 2).

Detected results for the analytes listed above should be considered as the minimum concentrations at which these analytes are present in the samples. Where the results for these analytes are nondetected, false negatives may exist.

The DMC 2-butanone-d5 also had low RRFs in the initial calibration performed on March 26, 2003 and continuing calibrations performed on March 27, March 28, and April 2, 2003 (see Table 2). Quantitation of the analytes associated with these DMCs may have been affected by the low RRFs (see Table 9).

The RRF evaluates instrument sensitivity and is used in the quantitation of target analytes.

D. Detected results and quantitation limits for the following analytes are qualified as estimated due to large relative standard deviations (RSDs) in the initial calibration, and are flagged "J" in Table 1A.

- Acetone, chloroethane, methyl acetate, and methylene chloride in all samples, all method blanks, and storage blank VHBLK01

RSDs exceeding the $\leq$30.0% validation criterion were observed for the analytes listed above in the initial calibration performed on March 26, 2003 (see Table 2).

The DMC chloroethane-d5 (31.0%) also had a RSD that exceeded the $\leq$30.0% validation criterion in the initial calibration performed on March 26, 2003. Quantitation of the analytes associated with this DMC may have been affected by the high RSD (see Table 9).

The initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of the analytical sequence and of producing a linear calibration curve.

E. Detected results and quantitation limits for the following analytes are qualified as estimated due to large percent differences (%Ds) in the continuing calibrations, and are flagged "J" in Table 1A.

- Acetone in sample Y0SJ5 and method blank VBLK4N
- Bromomethane in samples Y0SJ2, Y0SJ3, Y0SJ4, and method blank VBLK4P
- Chloroethane, chloromethane, dichlorodifluoromethane, 4-methyl-2-pentanone, trichlorofluoromethane, and vinyl chloride in method blank VBLK4U and storage blank VHBLK01

Percent differences exceeding the ±30.0% validation criterion were observed for the analytes listed above in the continuing calibrations performed on March 27, March 28 and April 2, 2003 (see Table 2).

The DMC bromoform-d3 (+30.5%) also had a %D that exceeded the ≤30.0% validation criterion in the continuing calibration performed on April 2, 2003. Quantitation of the analytes associated with this DMC may have been affected by the high %D (see Table 9).

The continuing calibration checks the instrument performance daily and produces the relative response factors (RRFs) for target analytes that are used for quantitation.

F. Detected results for the following analytes are qualified as estimated due to DMC recoveries outside QC limits, and are flagged "J" in Table 1A.

{Benzene-d_6}
- Benzene in sample Y0SJ3

{Toluene-d_8}
- Trichloroethene, toluene, tetrachloroethene, ethylbenzene, xylenes (total), and isopropylbenzene in samples Y0SJ2 and Y0SJ3

{Bromoform-d}
- Dibromochloromethane, 1,2-dibromoethane, and bromoform in samples Y0SJ2

Specific DMC recoveries outside QC limits are shown below.

Sample	DMC	% Recovery	QC Limits
Y0SJ3	Benzene-d6	123	78-121
Y0SJ2	Toluene-d8	157	77-120
Y0SJ3	Toluene-d8	145	77-120
Y0SJ2	trans-1,3-Dichloropropene-d4	144	80-128
Y0SJ3	trans-1,3-Dichloropropene-d4	199	80-128
Y0SJ2	Bromoform-d	75	76-135

Detected results for affected analytes where DMC recoveries exceeded QC limits may be biased high. Detected results for affected analytes where DMC recoveries fell below QC limits may be biased low, and where the results are nondetected, false negatives may exist. For DMC recoveries that exceeded QC limits, only detected results for associated analytes are qualified. The samples were reanalyzed at dilutions only.

Surrogates (e.g., deuterated monitoring compounds (DMCs)) are organic compounds which are similar to the target analytes in chemical composition and behavior in the analytical process, but which are not normally found in environmental samples. All samples are spiked with DMCs prior to purging. DMCs provide information about both the laboratory performance on individual samples and the possible effects of the sample matrix on the analytical results.

G. In the analysis of the field duplicate pair, the following outliers were obtained for the analytes listed below.

Analyte	Y0SJ2 (D1) Conc., µg/Kg	Y0SJ3 (D1) Conc., µg/Kg	RPD (<25%)
Bromomethane	0.45L	0.5U	N/A
1,1-Dichloroethene	26	18	36
cis-1,2-Dichloroethene	97	70	32
Cyclohexane	38	14	92
Methylcyclohexane	100	33	101
1,2-Dichloropropane	5	0.5U	N/A
Toluene	1.1	1.7	43
Tetrachloroethene	3.7	2.5	39
Xylenes (total)	1.4	2.1	40
Isopropylbenzene	22	15	38
1,1,2,2-Tetrachloroethane	1.0	0.5U	N/A

A relative percent difference (RPD) value is not calculated and is presented above as "N/A" when an analyte is detected in a field duplicate sample, but is nondetected (U) at the CRQL in the associated field duplicate sample. The effect of outliers on data quality is not known.

The analysis of field duplicate samples is a measure of both field and analytical precision. Imprecision in the results of the analysis of the field duplicate pair may be due to the sample matrix, method defects, or poor sampling or analytical technique.

H. Samples Y0SJ2 and Y0SJ3 were analyzed at 10-fold and 8-fold dilutions, respectively, due to the high levels of 1,1-dichloroethene, cis-1,2-dichloroethene, cyclohexane, and methylcyclohexane that exceeded the calibration range. Results for these analytes are reported from the diluted sample in Table 1A; results for all other analytes are reported from the undiluted sample.

Sample Y0SJ4 was analyzed at a 8-fold dilution due to the high levels of 1,1-dichloroethene, trichloroethene, and tetrachloroethene that exceeded the calibration range. Results for these analytes are reported from the diluted sample in Table 1A; results for all other analytes are reported from the undiluted sample.

ANALYTICAL RESULTS
Tier 3 Table 1A

Case No. : 31519 SDG No. : Y0SJ2
Site : CONTINENTAL HEAT TREATING
Lab : A4 SCIENTIFIC, INC.
Reviewer : Kendra DeSantolo
Date : May 19, 2003

QUALIFIED DATA
Concentration in ug/L

Analysis Type : Low Level Water Samples For Volatiles

Station Location :	CHT-GW-1			CHT-GW-3			CHT-GW-2			CHT-GW-4			Method Blank			Method Blank			Method Blank		
Sample ID :	Y0SJ2		D1	Y0SJ3		D1	Y0SJ4			Y0SJ5		EB	VBLK4N			VBLK4P			VBLK4U		
Collection Date :	03/19/2003			03/19/2003			03/19/2003			03/19/2003											
Dilution Factor :	1.0			1.0			1.0			1.0			1.0			1.0			1.0		
Volatile Compound	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**
Dichlorodifluoromethane	0.5U			0.5U			0.5U			0.5U			0.5U			0.5U			0.5U	J	E
Chloromethane	0.5U	J	B	0.5U	J	B	0.5U	J	B	0.5U			0.5U			0.5U			0.5U	J	E
Vinyl Chloride	1			1			0.3L	J	A	0.5U			0.5U			0.5U			0.5U	J	E
Bromomethane	0.5L	J	AEG	0.5U	J	EG	0.5U	J	E	0.5U			0.5U			0.5U	J	E	0.5U		
Chloroethane	0.3L	J	AD	0.3L	J	AD	0.5U	J	D	0.5U	J	D	0.5U	J	D	0.5U	J	D	0.5U	J	DE
Trichlorofluoromethane	0.5U			0.5U			0.5U			0.5U			0.5U			0.5U			0.5U	J	E
1,1-Dichloroethene	26		GH	18		GH	140		H	0.5U			0.5U			0.5U			0.5U		
1,1,2-Trichloro-1,2,2-trifluoroethane	0.5U			0.5U			0.6			0.5U			0.5U			0.5U			0.5U		
Acetone	33	J	CD	27	J	CD	5U	J	BCD	2L	J	ACDE	5U	J	CDE	5U	J	CD	5U	J	CD
Carbon Disulfide	0.5U			0.5U			0.5U			0.5U			0.5U			0.5U			0.5U		
Methyl Acetate	0.5U	J	D	0.5U	J	D	0.5U	J	D	0.5U	J	D	0.5U	J	D	0.5U	J	D	0.5U	J	D
Methylene Chloride	0.5U	J	D	0.5U	J	D	0.5U	J	D	0.5U	J	D	0.2L	J	AD	0.2L	J	AD	0.2L	J	AD
trans-1,2-Dichloroethene	2			2			0.4L	J	A	0.5U			0.5U			0.5U			0.5U		
Methyl tert-Butyl Ether	0.5U			0.5U			0.5U			0.5U			0.5U			0.5U			0.5U		
1,1-Dichloroethane	5			5			7			0.5U			0.5U			0.5U			0.5U		
cis-1,2-Dichloroethene	97		GH	70		GH	13			0.5U			0.5U			0.5U			0.5U		
2-Butanone	5U	J	C	5U	J	C	5U	J	C	5U	J	C	5U	J	C	5U	J	C	5U	J	C
Bromochloromethane	0.5U			0.5U			0.5U			0.5U			0.5U			0.5U			0.5U		
Chloroform	0.5U	J	B	0.5U			0.5U			0.5U	J	B	0.4L	J	A	0.3L	J	A	0.5U		
1,1,1-Trichloroethane	0.5U			0.5U			0.5U			0.5U			0.5U			0.5U			0.5U		
Cyclohexane	38		GH	14		GH	1			0.5U			0.5U			0.5U			0.5U		
Carbon Tetrachloride	0.5U			0.5U			0.5U			0.5U			0.5U			0.5U			0.5U		
Benzene	0.7			0.8	J	F	0.2L	J	A	0.5U			0.5U			0.5U			0.5U		
1,2-Dichloroethane	0.5U			0.5U			0.5U			0.5U			0.5U			0.5U			0.5U		
Trichloroethene	2	J	F	2	J	F	96		H	0.5U			0.5U			0.5U			0.5U		
Methylcyclohexane	100		GH	33		GH	0.5U			0.5U			0.5U			0.5U			0.5U		
1,2-Dichloropropane	5		G	0.5U		G	4			0.5U			0.5U			0.5U			0.5U		
Bromodichloromethane	0.5U			0.5U			0.5U			0.5U			0.5U			0.5U			0.5U		
cis-1,3-Dichloropropene	0.5U			0.5U			0.5U			0.5U			0.5U			0.5U			0.5U		
4-Methyl-2-pentanone	5U			5U			5U			5U			5U			5U			5U	J	E
Toluene	1	J	FG	2	J	FG	0.8U	J	B	0.2L	J	A	0.5U			0.5U			0.5U		
trans-1,3-Dichloropropene	0.5U			0.5U			0.5U			0.5U			0.5U			0.5U			0.5U		
1,1,2-Trichloroethane	0.5U			0.5U			0.6			0.5U			0.5U			0.5U			0.5U		
Tetrachloroethene	4	J	FG	3	J	FG	100		H	0.5U			0.5U			0.5U			0.5U		
2-Hexanone	5U			5U			5U			5U			5U			5U			5U		
Dibromochloromethane	0.5U	J	F	0.5U			0.5U			0.5U			0.5U			0.5U			0.5U		
1,2-Dibromoethane	0.5U	J	F	0.5U			0.5U			0.5U			0.5U			0.5U			0.5U		

ANALYTICAL RESULTS
Tier 3 Table 1A

Case No. : 31519 SDG No. : Y0SJ2
Site : CONTINENTAL HEAT TREATING
Lab : A4 SCIENTIFIC, INC.
Reviewer : Kendra DeSantolo
Date : May 19, 2003

QUALIFIED DATA
Concentration in ug/L

Analysis Type : Low Level Water Samples For Volatiles

Station Location :	CHT-GW-1			CHT-GW-3			CHT-GW-2			CHT-GW-4			Method Blank			Method Blank			Method Blank		
Sample ID :	Y0SJ2		D1	Y0SJ3		D1	Y0SJ4			Y0SJ5		EB	VBLK4N			VBLK4P			VBLK4U		
Collection Date :	03/19/2003			03/19/2003			03/19/2003			03/19/2003											
Dilution Factor :	1.0			1.0			1.0			1.0			1.0			1.0			1.0		
Volatile Compound	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**
Chlorobenzene	0.5U			0.5U			0.5U			0.5U			0.5U			0.5U			0.5U		
Ethylbenzene	14	J	F	11	J	F	0.5U			0.5U			0.5U			0.5U			0.5U		
Xylenes (total)	1	J	FG	2	J	FG	1			0.5U			0.5U			0.5U			0.5U		
Styrene	0.5U			0.5U			0.5U			0.5U			0.5U			0.5U			0.5U		
Bromoform	0.5U	J	BF	0.5U			0.5U			0.5U	J	B	0.4L	J	A	0.3L	J	A	0.5U		
Isopropylbenzene	22	J	FG	15	J	FG	0.5U			0.5U			0.5U			0.5U			0.5U		
1,1,2,2-Tetrachloroethane	1		G	0.5U		G	0.5U			0.5U			0.5U			0.5U			0.5U		
1,3-Dichlorobenzene	0.5U			0.5U			0.5U			0.5U			0.5U			0.5U			0.5U		
1,4-Dichlorobenzene	0.5U			0.5U			0.5U			0.5U			0.5U			0.5U			0.5U		
1,2-Dichlorobenzene	0.5U			0.5U			0.5U			0.5U			0.5U			0.5U			0.5U		
1,2-Dibromo-3-chloropropane	0.5U			0.5U			0.5U			0.5U			0.5U			0.5U			0.5U		
1,2,4-Trichlorobenzene	0.5U			0.5U			0.5U			0.5U			0.2L	J	A	0.2L	J	A	0.5U		
1,2,3-Trichlorobenzene	0.5U			0.5U			0.5U			0.5U			0.2L	J	A	0.2L	J	A	0.5U		

Val - Validity. Refer to Data Qualifiers in Table 1B.
Com - Comments. Refer to the Corresponding Section in the Narrative for each letter.
CRQL - Contract Required Quantitation LImit, N/A - Not Applicable, NA - Not Analyzed

D1, D2, etc. - Field Duplicate Pairs
FB - Field Blank, EB - Equipment Blank, TB - Trip Blank, BG - Background Sample

ANALYTICAL RESULTS
Tier 3 Table 1A

Case No. : 31519 SDG No. : Y0SJ2
Site : CONTINENTAL HEAT TREATING
Lab : A4 SCIENTIFIC, INC.
Reviewer : Kendra DeSantolo
Date : May 19, 2003

QUALIFIED DATA
Concentration in ug/L

Analysis Type : Low Level Water Samples
For Volatiles

Station Location :	Storage Blank			CRQL																	
Sample ID :	VHBLK01																				
Collection Date :																					
Dilution Factor :	1.0																				
Volatile Compound	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**							**Result**	**Val**	**Com**	**Result**	**Val**	**Com**
Dichlorodifluoromethane	0.5U	J	E	0.5																	
Chloromethane	0.2L	J	AE	0.5																	
Vinyl Chloride	0.5U	J	E	0.5																	
Bromomethane	0.5U			0.5																	
Chloroethane	0.5U	J	DE	0.5																	
Trichlorofluoromethane	0.5U	J	E	0.5																	
1,1-Dichloroethene	0.5U			0.5																	
1,1,2-Trichloro-1,2,2-trifluoroethane	0.5U			0.5																	
Acetone	5U	J	CD	5																	
Carbon Disulfide	0.5U			0.5																	
Methyl Acetate	0.5U	J	D	0.5																	
Methylene Chloride	0.6U	J	BD	0.5																	
trans-1,2-Dichloroethene	0.5U			0.5																	
Methyl tert-Butyl Ether	0.5U			0.5																	
1,1-Dichloroethane	0.5U			0.5																	
cis-1,2-Dichloroethene	0.5U			0.5																	
2-Butanone	5U	J	C	5																	
Bromochloromethane	0.5U			0.5																	
Chloroform	0.5U			0.5																	
1,1,1-Trichloroethane	0.5U			0.5																	
Cyclohexane	0.5U			0.5																	
Carbon Tetrachloride	0.5U			0.5																	
Benzene	0.5U			0.5																	
1,2-Dichloroethane	0.5U			0.5																	
Trichloroethene	0.5U			0.5																	
Methylcyclohexane	0.5U			0.5																	
1,2-Dichloropropane	0.5U			0.5																	
Bromodichloromethane	0.5U			0.5																	
cis-1,3-Dichloropropene	0.5U			0.5																	
4-Methyl-2-pentanone	5U	J	E	5																	
Toluene	0.5U			0.5																	
trans-1,3-Dichloropropene	0.5U			0.5																	
1,1,2-Trichloroethane	0.5U			0.5																	
Tetrachloroethene	0.5U			0.5																	
2-Hexanone	5U			5																	
Dibromochloromethane	0.5U			0.5																	
1,2-Dibromoethane	0.5U			0.5																	

ANALYTICAL RESULTS
Tier 3 Table 1A

Case No. : 31519 SDG No. : Y0SJ2
Site : CONTINENTAL HEAT TREATING
Lab : A4 SCIENTIFIC, INC.
Reviewer : Kendra DeSantolo
Date : May 15, 2003

QUALIFIED DATA
Concentration in ug/L

Analysis Type : Low Level Water Samples For Volatiles

Station Location :	Storage Blank			CRQL																
Sample ID :	VHBLK01																			
Collection Date :																				
Dilution Factor :	1.0																			
Volatile Compound	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**									**Com**	**Result**	**Val**	**Com**
Chlorobenzene	0.5U			0.5																
Ethylbenzene	0.5U			0.5																
Xylenes (total)	0.5U			0.5																
Styrene	0.5U			0.5																
Bromoform	0.5U			0.5																
Isopropylbenzene	0.5U			0.5																
1,1,2,2-Tetrachloroethane	0.5U			0.5																
1,3-Dichlorobenzene	0.5U			0.5																
1,4-Dichlorobenzene	0.5U			0.5																
1,2-Dichlorobenzene	0.5U			0.5																
1,2-Dibromo-3-chloropropane	0.5U			0.5																
1,2,4-Trichlorobenzene	0.5U			0.5																
1,2,3-Trichlorobenzene	0.5U			0.5																

Val - Validity. Refer to Data Qualifiers in Table 1B.
Com - Comments. Refer to the Corresponding Section in the Narrative for each letter.
CRQL - Contract Required Quantitation LImit, N/A - Not Applicable, NA - Not Analyzed

D1, D2, etc. - Field Duplicate Pairs
FB - Field Blank, EB - Equipment Blank, TB - Trip Blank, BG - Background Sample

TABLE 1B

DATA QUALIFIER DEFINITIONS FOR ORGANIC DATA REVIEW

The definitions of the following qualifiers are prepared according to the document, "USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review," October 1999.

U	The analyte was analyzed for but was not detected above the reported sample quantitation limit.
L	Indicates results which fall below the Contract Required Quantitation Limit. Results are estimated and are considered qualitatively acceptable but quantitatively unreliable due to uncertainties in the analytical precision near the limit of detection.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
NJ	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.
UJ	The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
R	The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

Table 2
Calibration Summary

Case No.: 31519 SDG No.: Y0SJ2
Site: Continental Heat Treating
Laboratory: A4 Scientific, Inc. (A4)
Reviewer: Kendra DeSantolo, ESAT/LDC
Date: May 19, 2003

RELATIVE RESPONSE FACTORS

	$\overline{\text{RRF}}$	RRF	RRF	RRF
Analysis date:	3/26/03	3/27/03	3/28/03	4/02/03
Analysis time:	18:19-21:01	08:59	11:50	10:17
GC/MS I.D.:	E-5973	E-5973	E-5973	E-5973
Analyte	Init.	Cont.	Cont.	Cont.
Acetone	0.032	0.021	0.025	0.034
2-Butanone	0.039	0.036	0.040	0.049
2-Butanone-d5	0.035	0.032	0.036	0.043

PERCENT RELATIVE STANDARD DEVIATIONS AND PERCENT DIFFERENCES

	%RSD	%D	%D	%D
Analysis Date:	3/26/03	3/27/03	3/28/03	4/02/03
Analysis Time:	18:19-21:01	08:59	11:50	10:17
GC/MS I.D.:	E-5973	E-5973	E-5973	E-5973
Analyte	Init.	Cont.	Cont.	Cont.
Acetone	63.5	-34.4	-----	-----
Bromomethane	----	-----	-38.3	-----
Chloroethane	31.6	-----	-----	+43.2
Chloromethane	----	-----	-----	+33.3
Dichlorodifluoromethane	----	-----	-----	+33.4
Methyl Acetate	45.2	-----	-----	-----
4-Methyl-2-pentanone	----	-----	-----	+31.4
Methylene Chloride	40.5	-----	-----	-----
Trichlorofluoromethane	----	-----	-----	+37.1
Vinyl Chloride	----	-----	-----	+30.7
Bromoform-d3	----	-----	-----	+30.5
Chloroethane-d5	31.0	-----	-----	-----

- = RRF biased low; + = RRF biased high.

ASSOCIATED SAMPLES AND METHOD BLANKS

Initial 3/26/03 (18:19):	All samples, all method blanks, and storage blank VHBLK01
Cont. 3/27/03 (08:59):	Y0SJ2DL, Y0SJ3DL, Y0SJ4DL, Y0SJ5 and method blank VBLK4N
Cont. 3/28/03 (11:50):	Y0SJ2, Y0SJ3, Y0SJ4, and method blank VBLK4P
Cont. 4/02/03 (10:17):	Storage blank VHBLK01 and method blank VBLK4U

Table 9. Volatile Deuterated Monitoring Compounds and the Associated Target Compounds

Chloroethane-d5 (DMC)	1,2-Dichloropropane-d6 (DMC)	1,2-Dichlorobenzene-d4 (DMC)
Dichlorodifluoromethane	Cyclohexane	Chorobenzene
Chloromethane	Methylcyclohexane	1,3-Dichlorobenzene
Bromomethane	1,2-Dichloropropane	1,4-Dichlorobenzene
Chloroethane	Bromodichloromethane	1,2-Dichlorobenzene
Carbon Disulfide		1,2,4-Trichlorobenzene
		1,2,3-Trichlorobenzene

Bromoform-d (DMC)	trans-1,3-Dichloropropene-d4 (DMC)	Chloroform-d (DMC)
Dibromochloromethane	cis-1,3-Dichloropropene	1,1-Dichloroethane
1,2-Dibromoethane	trans-1,3-Dichloropropene	Bromochloromethane
Bromoform	1,1,2-Trichloroethane	Chloroform

2-Butanone-d5 (DMC)	1,1-Dichloroethene-d2 (DMC)	2-Hexanone-d5 (DMC)
Acetone	trans-1,2-Dichloroethene	4-Methyl-2-pentanone
2-Butanone	cis-1,2-Dichloroethene	2-Hexanone

Vinyl Chloride-d3 (DMC)	Benzene-d6 (DMC)	1,1,2,2-Tetrachloroethane-d2 (DMC)
Vinyl Chloride	Benzene	1,1,2,2,-Tetrachlororethane
		1,2-Dibromo-3-chloropropane

1,2-Dichloroethane-d4 (DMC)	Toulene-d8 (DMC)
Trichlorofluoromethane	Trichloroethene
1,1-Dichloroethene	Toluene
1,1,2-Trichloro-1,2,2-trifluoroethane	Tetrachloroethene
Methyl Acetate	Ethylbenzene
Methylene Chloride	Xylenes (total)
Methyl tert-Butyl Ether	Styrene
1,1,1-Trichloroethane	Isopropylbenzene
Carbon Tetrachloride	
1,2-Dichloroethane	

1LCF

LOW CONCENTRATION WATER VOLATILE ORGANICS ANALYSIS
DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
Y0SJ2

Lab Name: A4 SCIENTIFIC, INC. Contract: 68-W-01-038

Lab Code: A4 Case No.: 31519 Client No.: SDG No.: Y0SJ2

Lab Sample ID: 2762.002 Date Received: 03/20/2003

Lab File ID: E4043 Date Analyzed: 03/28/2003

Purge Volume: 25 (ML) Dilution Factor: 1.0

GC Column: DB-624 ID: 0.20 (MM) Length: 25 (M)

Number TICs found: 6

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC. (UG/L)	Q
01		UNKNOWN	8.42	3.8	J
02	000694-72-4	Pentalene, octahydro-	10.47	5.0	JN
03	000103-65-1	Benzene, propyl-	12.26	22	JN
04	000135-98-8	Benzene, (1-methylpropyl)-	13.02	5.0	JN
05	000496-11-7	Indane	13.45	21	JN
06	000767-58-8	Indan, 1-methyl-	13.96	8.5	JN
07					
08					
09					
10					
11					
12					
13					
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1LCF

LOW CONCENTRATION WATER VOLATILE ORGANICS ANALYSIS
DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
Y0SJ3

Lab Name: A4 SCIENTIFIC, INC. Contract: 68-W-01-038

Lab Code: A4 Case No.: 31519 Client No.: SDG No.: Y0SJ2

Lab Sample ID: 2762.003 Date Received: 03/20/2003

Lab File ID: E4045 Date Analyzed: 03/28/2003

Purge Volume: 25 (ML) Dilution Factor: 1.0

GC Column: DB-624 ID: 0.20 (MM) Length: 25 (M)

Number TICs found: 4

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC. (UG/L)	Q
01	000103-65-1	Benzene, propyl-	12.26	4.7	JN
02	000496-11-7	Indane	13.45	5.0	JN
03	000767-58-8	Indan, 1-methyl-	13.96	1.9	JN
04	002039-89-6	Benzene, 2-ethenyl-1,4-dimet	14.60	1.7	JN
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LOW CONCENTRATION WATER VOLATILE ORGANICS ANALYSIS
DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
Y0SJ4

Lab Name: A4 SCIENTIFIC, INC. Contract: 68-W-01-038

Lab Code: A4 Case No.: 31519 Client No.: SDG No.: Y0SJ2

Lab Sample ID: 2762.004 Date Received: 03/20/2003

Lab File ID: E4047 Date Analyzed: 03/28/2003

Purge Volume: 25 (ML) Dilution Factor: 1.0

GC Column: DB-624 ID: 0.20 (MM) Length: 25 (M)

Number TICs found: 6

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC. (UG/L)	Q
01		UNKNOWN	3.04	1.1	J
02	~~000556-67-2~~	~~Cyclotetrasiloxane, octameth~~	~~12.23~~	(column bleed) ~~0.82~~	~~JN~~
03	000108-67-8	Benzene, 1,3,5-trimethyl-	12.85	0.67	JN
04		UNKNOWN	13.00	0.73	J
05		~~UNKNOWN~~ (column bleed)	~~13.99~~	~~0.56~~	~~J~~
06	000124-19-6	Nonanal	14.11	0.89	JN
07					
08					
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A4 SCIENTIFIC, INC.
1544 Sawdust Road, Suite 505 • The Woodlands, TX 77380 • Phone (281) 292-5277

Contract #: 68W01038	Case #: 31519	SDG #: Y0SJ2

SDG NARRATIVE

The estimated total concentrations of alkanes by type are listed below.

EPA Sample #	Lab Sample #	Straight Chain (µg/L)	Branched (µg/L)	Cyclic (µg/L)
Y0SJ2	2762.002		13.91	241.67
Y0SJ2DL	2762.002DL		0.83	17.2
Y0SJ3	2762.003		12.79	218.58
Y0SJ3DL	2762.003DL		0.5	5.87
Y0SJ4	2762.004		0.67	

The samples Y0SJ2,Y0SJ3 AND Y0SJ4 were analyzed at a dilution to get all the compounds with in the range.

Manual integrations were performed for the following samples for the compounds listed against them.

Y0SJ2 – Xylene(total)
Y0SJ3 – Xylene(total)
Y0SJ4 – Xylene(total)

These manual integrations were necessary because the software failed to accurately integrate the entire peak. In all the above instances, the quantitation reports are flagged with "m". A hard copy printout of the manual integration, the scan ranges, and initials of the analyst or manager is included in the data package.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package and in the computer readable data submitted on diskette has been authorized by the laboratory manager or his/her designee, as verified by the following signature:

QC coordinator
Signature and Title

04/09/02
Date of Signature

1.1002